



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/670,154	09/26/2000	Gengying Gao	75292/06037	4842

7590 08/13/2003

JURGEN K. VOLLRATH
588 Sutter Street
#531
San Francisco, CA 94102

EXAMINER

NGUYEN, TRUNG Q

ART UNIT

PAPER NUMBER

2829

DATE MAILED: 08/13/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/670,154

Applicant(s)

GAO ET AL.

Examiner

Trung Q Nguyen

Art Unit

2829

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 June 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Appeal Brief

1. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

Claim Rejections - 35 USC § 112

2. Claim 27 is rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Regarding claim 1, the specification and drawings as original filed do not provide support for good ESD performance wherein ESD is the testing of electro static discharge. It is unclear what is the characteristic of a good ESD performance? What is a standard good ESD performance since it is known to all those skilled in the art that testing the ESD is known to apply "a light source via laser beam or the like, wherein the energy of the beam corresponds to the band-gap of the substrate of the DUT and monitoring the reflected by the diffusions from the beam to calculated the degree of electro-absorption in which related to the ESD susceptibility of the DUT." In addition, the drawing and specification do not give any support for the limitation of I/O cell. It is unclear where I/O cell came from and how it is related to the ESD performance.

Claims 2-20 are rejected for being dependent on rejected claim 1.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Paniccia (U.S. 5,872,360).

As to claim 1, Paniccia et al. (hereafter Paniccia) disclose in Figure 4 a method of testing the ESD of an IC 405 device comprising a laser beam 413 and monitoring via detector 417 the amount of light reflected from the device (see column 4 line 61 to column 5 line 6).

As to claim 2, Paniccia discloses in Figure 4 a laser beam 413 is used to probe the IC device 405.

As to claim 3, Paniccia discloses in column 5, lines 24-31 that the energy of the laser beam corresponds substantially to the band gap of the substrate of the device.

As to claim 4, Paniccia discloses in column 5, lines 8-10 that the substrate is silicon and in column 5, lines 20-23 that the energy of the laser beam is about 1.1eV

Art Unit: 2829

(via $\lambda=1.064\text{nm}$ in wavelength, base on $\lambda=E/hc$, h is Plank constant ($h=6.626\times 10^{-34}$) and c is the speed of light ($c=3\times 10^8\text{m/s}$ therefore, $E=1.1\text{eV}$).

As to claim 5, Paniccia discloses in Figure 6 and in column 6, lines 6-14 that the diffusions of the IC device 603 are probed with the laser beam 609.

As to claim 6, Paniccia discloses in Figure 4 and in column 6, lines 13-17 that the device is probed through the back of the device.

As to claim 7, Paniccia discloses in Figure 4 and in column 5, lines 42-58 that the diffusions of I/O cells via P-N Junction of 603 are probed via light 609 to determine how much light is absorbed via light 413 of Fig. 4 and how much light is reflected via light 415 of Fig. 4 by the diffusions 58.

As to claim 8, Paniccia discloses in Figure 7 and in column 7, lines 1-23 that several samples via 703, 705 and 707 are taken of each probed location and the results averaged.

As to claims 9 and 17, Paniccia discloses in Figure 4 and in column 5, lines 20-23 that a mode-locked laser 407 is used to probe the IC device.

As to claims 10 and 18, Paniccia discloses in Figure 7 and in column 8, lines 6-15 that a continuous wave laser is used to probe the IC device.

As to claims 11 and 19, Paniccia discloses in Figure 4 the mode locked laser 407 is positioned to provide a laser beam 413, which is focused on an active region 403. It is obvious that the mode locked laser 407 had positioned by a user in order to focused on an active region 403.

As to claims 12 and 20, Paniccia discloses in Figure 8 the mode-locked laser 803 is positioned automatically using image recognition 843 via camera.

As to claim 13, Although Paniccia does not explicitly disclose that power is supplied to the DUT; the power supply is inherent to the DUT since it requires power to operate.

As to claims 14-15, Paniccia discloses in Figure 4 testing is performed on the device in a package form (column 5, lines 9-10) and prepackage (via to be packaged, column 1, lines 50-55).

As to claim 16, Paniccia discloses the device includes only some of its layers (column 1, lines 62-67).

R sponds to Arguments

5. Applicant's arguments with respect to claims 1-20 have been considered. Some of the arguments are moot in view of the new explanations provided in the rejection for applicant's benefit. The other arguments are not persuasive.

6. *The applicants argue that:*

- a) Paniccia does not disclose a method of testing the ESD performance of an integrated circuit (IC).
- b) Paniccia does not disclose using a continuous laser to position the mode-locked laser.
- c) Paniccia does not disclose testing a device having only some of its layers.

7. The examiner respectfully disagree to the above argues because:

In response to the argument a) above, it is known to all those skilled in the art that testing the ESD is known to apply "a light source via laser beam or the like, wherein the energy of the beam corresponds to the band-gap of the substrate of the DUT and monitoring the reflected by the diffusions from the beam to calculated the degree of electro-absorption in which related to the ESD susceptibility of the DUT." The cited reference (Paniccia et al.) disclose in Figure 4 a method of testing the ESD performance of an IC 405 device comprising a laser beam 413 and monitoring via detector 417 the amount of light reflected from the device (see column 4 line 61 to column 5 line 6). Therefore, the above argument is not persuasive

In response to the argument b) and c) above, Paniccia et al. disclose Paniccia discloses the device includes only some of its layers (column 1, lines 62-67) and in

Figure 7 and in column 8, lines 6-15 that a continuous wave laser is used to probe the IC device. It is well known in the semiconductor industry that a continuous laser has a continuous wave length. Therefore, the above arguments are not persuasive

In addition, any special **structural and/or functional** aspect of the Applicant's invention that renders it patentably distinct over prior art has to be clear from the **claims themselves**; the Applicant cannot rely on the specification or on arguments that he advances to the Examiner in an amendment. **That is, he cannot rely on factors not recited in the rejected claims.** Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). See also *Constant v. Advanced Micro-Devices, Inc.*, 848 F.2d 1560, 1571-72 7 USPQ2d 1057, 1064-1065 (Fed. Cir.), *cert denied*, 488 U.S. 892 (1988), in which it was held that various limitations on which the appellant relied could not be given meaning since they **were not stated in the claims**. In *Ex parte McCullough*, 7 USPQ2d 1889, 1891 (Bd. Pat. App. & Inter. 1987), a claimed electrode was rejected although it was asserted in the **specification** that it functions differently from prior art electrodes, since "although the demonstrated results may be germane to the patentability of a battery containing appellant's electrode, they are not germane to the invention **claimed** on appeal" (emphasis added).

Conclusion

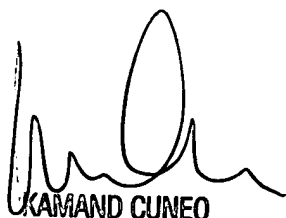
8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Trung Nguyen whose telephone number is 703-305-

Art Unit: 2829

4925. The examiner can normally be reached on Monday through Friday, 8:30AM – 5:00PM. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-5841. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cuneo Kammie can be reached at (703) 308-1233.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)-308-0956.

Trung Nguyen
Patent Examiner
Group Art Unit 2829
August 05, 2003



KAMAND CUNEO
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800